



State of Wisconsin
Governor Tony Evers

Department of Agriculture, Trade and Consumer Protection
Secretary Randy Romanski

Wisconsin Administrative Code Chapter ATCP 51 Technical Expert Committee Agenda

04/11/2023

The Livestock Facility Siting Technical Expert Committee (TEC) will meet on April 11, 2023. The TEC will hold its official business at 1:00pm via Zoom and at 2811 Agriculture Drive, Madison WI, 53718. To attend the meeting remotely, you must use the following Zoom hyperlink
<https://www.zoomgov.com/j/1606309708?pwd=RFB0REJBakswTnhFdkpZbFBWZXdUZz09> meeting ID 160 630 9708, passcode 374223. The agenda for the meeting is shown below.

AGENDA ITEMS AND TENTATIVE SCHEDULE:

- 1 Call the Meeting to Order – **DATCP staff**
 - a. Roll Call
 - b. Open meeting notice
 - c. Introductions
 - d. Review Minutes of March 6 and 13 TEC Meetings
- 2 Review ATCP 51 standards for Setbacks and Odor and Air Emissions
 - a. Background on standard - **DATCP Staff**
 - b. Previous recommendations - **DATCP Staff**
 - c. Discuss current standards
 - d. Formulate recommendations
- 3 Planning for next TEC meeting - DATCP Staff
General standards in ATCP 51 and finalizing recommendations
- 4 Adjourn

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MINUTES
LIVESTOCK FACILITY SITING TECHNICAL EXPERT COMMITTEE

March 6, 2023
2811 Agriculture Drive and
ZoomGov Meeting

Item #1 Call to Order—Roll Call, Open Meeting Notice, Introductions

Call to Order

The Livestock Facility Siting Technical Expert Committee (Committee) met in person and via videoconference on **March 6, 2023**. The meeting was preceded by public notice as required by Wis. Stat. § 19.84. The meeting was called to order at **12:00 pm**.

Members Present

Members: Scott Frank, Nikki Wagner, Travis Drier, Emily Micolichek, AV Roth, Jay Heeg, Curtis Hedman, Mike Koles, Matt Zangl and Gaylord Olson were present.

Staff: Tim Jackson, Tim Anderson, Alex Elias, Matt Woodrow, Dennis Marquardt and Katy Smith of DATCP were present. Bernie Michaud and Tyler Dix of DNR were present. Beth Peterson and Steve Becker of NRCS were present.

The Committee reviewed the minutes of the January 27, 2023 meeting of the Committee meeting and offered no revisions.

Item #2 Review waste storage facility NRCS conservation practice standards (CPS) 313 (Nov 2004), NRCS CPS 634 (Nov 2004) and other developments in the CPS for waste storage facilities.

Tim Jackson, DATCP, reviewed [ATCP 51.18, Wis. Admin Rule](#), and [ATCP 51, Appendix A, Worksheet 4](#) with the Committee. Dennis Marquardt, Conservation Engineer, DATCP delivered a presentation on technical changes between the NRCS CPS 313 (2004) and NRCS CPS 313 (2017) standard, and between the NRCS CPS 634 (2004) and NRCS CPS 624 (2022) standard. The [presentation](#) is available on the Livestock Facility Siting Technical Expert Committee's [webpage](#).

Jackson reviewed historical recommendations of previously convened Technical Expert Committees and facilitated a discussion on the livestock facility siting waste storage facility standard. The Committee discussion guide is available within the [March 6th Meeting Materials](#) which are accessible on the Committee's [webpage](#). Marquardt and Matt Woodrow, DATCP; Tyler Dix and Bernie Michaud, DNR; and Beth Peterson and Steve Becker, NRCS were available to answer technical questions related to the waste storage facility conservation practice standards in an advisory capacity.

The Committee, advisors and Livestock Facility Siting Program Staff discussed the following:

1. What is and what is not working with the existing ATCP 51 standard for waste storage facilities?

The Committee discussed that most counties which have manure storage ordinances already use the updated CPS. As a result, most livestock siting applicants are likely already meeting the updated CPS

in counties where those manure storage ordinances exist. Private engineering consultants are also accustomed to meeting the updated CPS, even in areas where those manure storage ordinances don't exist.

The Committee also noted that livestock facility siting law is intended to set uniform expectations and regulations for livestock facility operators. Using outdated CPS are therefore not meeting the intent of the law. Some members suggested using references to Wis. Admin. Rule ATCP 50 in order to achieve uniform expectations and consistency across state programs.

The Committee identified that the referenced version of NRCS CPS 360 is different in ATCP 51.18(4) (Dec, 2002) and in Worksheet 4 (June, 2001).

2. Do the ATCP 51.18 waste storage facility standards meet the obligation of s. 93.90(2)(b)1-7?

The Committee expressed that while the updated CPS do have additional costs when compared to the outdated versions currently in rule that most facilities are already being designed to the updated CPS. The committee discussed that the biggest changes between the CPS referenced in ATCP 51 and updated CPS are the required separation distances and liner standards, but that only new and substantially altered waste storage structures would need to meet an updated CPS if incorporated into a revision of ATCP 51. Peterson advised that part of the reason that the CPS have been updated by NRCS is to account for the change in manure consistency over time.

The Committee also discussed the criteria for evaluating existing waste storage structures under ATCP 51.18(2). Substantially altering those evaluation criteria for existing structures could cause them to become impractical due to the associated costs to come into compliance. However, the existing criteria may not be protective enough of ground and surface water. NRCS uses a workflow to evaluating existing waste storage structures to the 2009 version of NRCS CPS 313 for comprehensive nutrient management plans, and DNR uses a visual observation-based checklist to evaluate existing waste storage structures for its CAFO program. The Committee opted to continue this discussion further, under question #5 "Should the criteria in ATCP 51.18(2) to prove compliance for existing waste storage facilities be revised?".

1. Should ATCP 51.18 be revised to require compliance with the updated versions of the CPS for waste storage facilities and their associated standards? Or should ATCP 51 reference ATCP 50 to match other state program requirements?

The Committee asked if cost-share is offered for designing to the updated CPS. While cost-share is not required under a livestock siting approval, other programs may require some form of cost-share to comply with updated CPS. Most waste storage facilities are already being designed to the newer CPS, especially given the prevalence of county manure storage ordinances.

The Committee also discussed using a reference to ATCP 50 instead of another dated version of the CPS. This could remedy the current conflicts with other programs and ordinances, such as county manure storage ordinances. ATCP 50 has historically been updated more often than ATCP 51, although this may not be the only consideration for The Committee. Woodrow clarified that Administrative Rules can incorporate a newer version of CPS, without opening the entire rule up for revision, if those technical changes are not considered substantial updates. This could expedite updates to the CPS in ATCP 51 when appropriate.

2. Should the worksheet 4 exemption for WPDES permit holders under 51.18(7) remain? If yes: Should additional documentation from WPDES permit applicants be required as part of the exemption? What information would be helpful?

The Committee asked what the WPDES permit evaluation is like for CAFOs, and what is on the CAFO factsheets for waste storage, which was recommended for inclusion in the exemption requirements during the January 27th meeting. WPDES permits are evaluated for approval of new, substantially altered and existing waste storage structures. Advisors reported that CAFOs generally meet the most up-to-date versions of the CPS. The CAFO factsheet does include a paragraph about each waste storage facility but does not include engineering details. The Committee discussed the value of requiring copies of waste storage documentation from a WPDES permit up front in a livestock siting application. It may be helpful in some situations, but for town-level review especially it may be less efficient to increase the technical documents provided for a WPDES exemption. The Committee was in favor of the exemption remaining in place.

3. Should the criteria in ATCP 51.18(2) to prove compliance for existing waste storage facilities be revised?

The Committee discussed the five listed criteria and identified criteria (c) specifically as needing evaluation. The Committee discussed if DATCP could evaluate all the criteria, but specifically (c), as an area of the rule that may not currently be working. Some further evaluation outside of a visual inspection may be necessary for structures which fall under criteria (c), which would be greater than 10 years old. Often, the original as-builts are no longer available for those structures.

4. Should a time-based waste storage capacity requirement be incorporated (i.e. 180 days)? Does this type of capacity requirement become an issue during an expansion?

The Committee discussed that a time-based storage requirement could qualify less of a risk for land applications when conditions would promote runoff, such as during winter months. Some risks are location dependent. CAFOs currently have a 180 days of storage requirement through their WPDES permit. But some operations just below the threshold may be presenting a higher risk of runoff from land applications without that 180-day requirement. It may be more equitable to require facilities under CAFO size to have a time-based storage requirement. The Committee did identify that an updated (2015) NRCS 590 requirement for nutrient management plans does incorporate restrictions for areas and times of high risk for runoff from land applications. However, monitoring for correct implementation of a nutrient management plan could be more difficult than a time-based storage requirement.

The Committee offered the following recommendations:

The Committee, as a consensus, recommends that DATCP review the definition for “substantially altered” under [ATCP 51.01\(40\)](#) to determine if it properly applies in all scenarios.

The Committee, as a consensus, recommends updating 51.18 to incorporate the newest conservation practice standards for new and substantially altered waste storage facilities. DATCP should consider what the best vehicle for achieving that recommendation is, whether that be through cross-referencing another state rule, such as ATCP 50, or directly referencing dated versions of those conservation practice standards.

The Committee, as a consensus, recommends adding a requirement to include the WPDES factsheet with a copy of the WPDES permit if an applicant is using the exemption afforded in ATCP 51.18(7) for Worksheet 4 of the application.

The Committee, as a consensus, recommends that DATCP review the criteria for evaluating existing waste storage facilities under ATCP 51.18(2), specifically criteria (c).

Part of the Committee recommends that the nutrient management standard should remain the focus of waste management, rather than a size-based or time-based waste storage capacity requirement. Updating the NRCS 590 standards for nutrient management plans would address that.

Item #3 Break

Jackson informed the committee that they were nearing the end of their scheduled meeting time. The Committee had the option to either start the next agenda item and run until the end of the meeting time or adjourn now and start the next agenda item at the scheduled follow-up meeting. The Committee elected to take a 5-minute break and start the next agenda item.

Item #4 Review runoff management NRCS conservation practice standard (CPS) 635 (Jan 2002), using BARNY to model predicted phosphorous runoff for existing animal lots, feed storage CPS and new developments in the CPS

Jackson reviewed [ATCP 51.20, Wis. Admin Rule](#), and [ATCP 51, Appendix A, Worksheet 5](#) with the Committee. Matt Woodrow, Manager - Conservation Engineering Section, DATCP delivered a presentation on technical changes between the NRCS CPS 635 (2002) and NRCS CPS 635 (2016) conservation practice standard, and modeling predicted runoff from animal lots. The [presentation](#) is available on the Livestock Facility Siting Technical Expert Committee's [webpage](#).

The meeting was adjourned at 4:05 pm.

**MINUTES
LIVESTOCK FACILITY SITING TECHNICAL EXPERT COMMITTEE**

**March 13, 2023
2811 Agriculture Drive and
ZoomGov Meeting**

Item #1 Call to Order—Roll Call, Open Meeting Notice, Introductions

Call to Order

The Livestock Facility Siting Technical Expert Committee (Committee) met in person and via videoconference on **March 13, 2023**. The meeting was preceded by public notice as required by Wis. Stat. § 19.84. The meeting was called to order at **1:00 pm**.

Members Present

Members: Scott Frank, Nikki Wagner, Travis Drier, Emily Micolichek, AV Roth, Jay Heeg, Curtis Hedman, Matt Zangl and Gaylord Olson were present. Mike Koles was absent.

Staff: Tim Jackson, Alex Elias, Matt Woodrow, Dennis Marquardt and Katy Smith of DATCP were present. Bernie Michaud and Tyler Dix of DNR were present. Beth Peterson of NRCS was present.

This meeting is a continuation of the agenda from the March 6 meeting.

Item #2 Review runoff management NRCS conservation practice standard (CPS) 635 (Jan 2002), using BARNY to model predicted phosphorous runoff for existing animal lots, feed storage CPS and new developments in the CPS

Tim Jackson, DATCP, reviewed historical recommendations of previously convened Technical Expert Committees and facilitated a discussion on the livestock facility siting runoff management standard. The Committee discussion guide is available within the [March 13th Meeting Materials](#) which are accessible on the Committee's [webpage](#). Dennis Marquardt and Matt Woodrow, DATCP; Tyler Dix and Bernie Michaud, DNR; and Beth Peterson, NRCS were available to answer technical questions related to the runoff management conservation practice standards in an advisory capacity.

The Committee, advisors and Livestock Facility Siting Program Staff discussed the following:

1. What is and what is not working with the existing ATCP 51 standard for runoff management?

The Committee discussed the BARNY model's use compared to the BERT and APLE-lots models for calculating phosphorous runoff potential. The Committee also recognized that NRCS CPS were updated according to needs at the time. The committee noted that the exception to collecting discharge and leachate for high-moisture feed storage on less than one acre in size in ATCP 51.20(3)(b)2 may not be protective enough of surface waters. The Committee also identified that many other county ordinances reference newer CPS for runoff management and using outdated versions in ATCP 51 creates inconsistencies with other local regulation. The Committee discussed what runoff management requirements apply to CAFOs. CAFOs must have zero discharge to waters of the state, so they are held to a more stringent requirement than facilities permitted under ATCP 51 currently.

2. Do the ATCP 51.20 runoff management standards meet the obligation of s. 93.90(2)(b)1-7?

The Committee expressed that copies of old versions of NRCS CPS can be hard to find and administering them alongside other local ordinances that apply different CPS is difficult. Most livestock facilities are meeting the newer version of CPS as required elsewhere, and most private consultants want to use the newest versions. The Committee discussed the effect of applying a newer version of CPS on farms under the CAFO threshold and potential impacts on expansion efforts. The changes to NRCS CPS 635 in 2012 were substantial compared to the 2002 version. The newer versions address additional areas for runoff risk compared to the older versions. However, application of this standard could incur additional costs or prohibitions on existing facilities with environmentally sensitive areas when expanding. The Committee affirmed that updated CPS would only apply to new or substantially altered animal lots and feed storage structures.

3. Should ATCP 51.20 be revised to require compliance with the updated versions of the CPS for runoff management, including other relevant CPS? Or should ATCP 51 reference ATCP 50 to match other state program requirements?

The Committee discussed that updating NRCS CPS 635 would include CPS requirements for feed storage where the 2002 version has none. Doing this would likely require the removal of language currently in ATCP 51 meant to specifically address feed storage in the absence of a proper CPS. The Committee again identified that outdated CPS creates conflict with other local ordinances. Referencing ATCP 50 may be better for creating consistency across programs and locally adopted regulations. The Committee affirmed updated standards in ATCP 51 would only apply to new permits, not those previously approved.

4. Should the worksheet 4 exemption for WPDES permit holders under 51.20(10) remain? If yes: Should additional documentation from WPDES permit applicants be required as part of the exemption? What information would be helpful?

The Committee discussed that some consultants for WPDES permitting facilities provide thorough documentation to a livestock facility siting regulatory authority up front, if they know what staff need to verify compliance with runoff management standards, including the BARNY model. The committee discussed that the option for a local permitting authority to request additional documentation to substantiate information provided in an application should remain an option. The approval process for facilities and permitting authorities should be efficient when a WPDES permit is used as an exemption from worksheets. The Committee acknowledged their previous recommendation to add the CAFO factsheet as a required submission with a copy of the WPDES permit. Additional documentation may be helpful for local staff to request as well.

5. Is BARNY still the most acceptable runoff model for compliance with (updated) runoff management CPS?

The Committee discussed that BARNY is still the best model for predicting an output in pounds of phosphorous. If there will continue to be a requirement in ATCP 51 that refers to an output in predicted pounds of phosphorous, sticking with BARNY is the right model. Additional field observations could be added to Worksheet 5, such as the DNR guidance on determining direct runoff from animal lots. Additional professional judgement may strengthen the presumption of compliance for existing lots and structures. The Committee identified that if the required CPS were updated, Worksheet 5 would need to be wholly revised to accommodate it.

The Committee offered the following recommendations:

The Committee, as a consensus, recommends that DATCP consider the WPDES permit timeline and aim for better consistency between it and local siting approval, specifically the requirement for submission of engineering designs.

The Committee, as a consensus, recommends updating 51.20 to incorporate the newest conservation practice standards for new and substantially altered animal lots and feed storage structures. DATCP should consider what the best vehicle for achieving that recommendation is, whether that be through cross-referencing another state rule, such as ATCP 50, or directly referencing dated versions of those conservation practice standards.

The Committee, as a consensus, recommends that existing feed storage structures should be required to be evaluated for risk of discharge or leaching.

Part of the Committee recommends that DATCP review the 70% moisture threshold for feed storage runoff management standards to determine if it is still the appropriate number.

Item #3 Preparing for the Next Meeting

Jackson advised the committee that the next meeting would focus on review of the Livestock Facility Siting Setbacks and Odor and Air Emissions standards ([ATCP 51.12 and 51.14](#), [Wis. Admin Rule, ATCP 51](#), [Appendix A, Worksheet 2](#)). The committee should expect a survey of their availability for the week of April 10th during the next few days. A packet of materials for the committee to prepare, including an agenda and discussion guide, will be sent at least one week in advance of the next scheduled meeting.

The meeting was adjourned at 3:31 pm.

ordinance may incorporate the standards and application requirements by reference, without reproducing them in full.

Note: The livestock facility siting law, s. 93.90, Stats., limits the reasons for which a political subdivision may deny local approval. For the first 6 months after the effective date of this chapter, from May 1, 2006 to November 1, 2006, a political subdivision may deny local approval based on standards in this chapter without incorporating those standards by local ordinance. See sub. (1). Sub. (2) applies beginning on November 1, 2006.

(3) MORE STRINGENT LOCAL STANDARDS. A political subdivision may not apply local standards that are more stringent than the standards in this subchapter unless all of the following apply:

(a) The political subdivision is authorized to adopt the local standards under other applicable law.

(b) The political subdivision enacted the standards by local ordinance, before the livestock facility operator filed the application for local approval.

(c) The political subdivision enacted the standards based on reasonable and scientifically defensible findings of fact adopted by the political subdivision's governing authority.

(d) The findings of fact under par. (c) clearly show that the standards are needed to protect public health or safety.

Note: See s. 93.90 (3) (ar), Stats.

(4) ORDINANCE PROVISIONS FILED WITH DEPARTMENT. Within 30 days after a political subdivision enacts an ordinance provision under sub. (2) or (3), the political subdivision shall file a copy of the ordinance provision with the department. Failure to file the ordinance provision with the department does not invalidate the ordinance provision. The political subdivision shall file the ordinance provision, by mail or e-mail, at the following applicable address:

Wisconsin Department of Agriculture,
Trade and Consumer Protection
Agricultural Resource Management Division
Bureau of Land and Water Resources
P.O. Box 8911
Madison, WI 53708-8911
E-mail: livestocksiting@wisconsin.gov

History: CR 05-014; cr. Register April 2006 No. 604, eff. 5-1-06; correction in (4) made under ss. 13.92 (4) (b) 6. and s. 35.17, Stats., Register May 2020 No. 773.

ATCP 51.12 Livestock structures; location on property. (1) **PROPERTY LINE AND ROAD SETBACKS; GENERAL.** Livestock structures shall comply with local ordinance requirements related to setbacks from property lines and public roads, except that no local setback requirement may do any of the following:

(a) Require a livestock structure to be set back more than 100 feet from any property line or public road right-of-way, except as provided in sub. (2), if the livestock facility will have fewer than 1,000 animal units.

(b) Require a livestock structure to be set back more than 200 feet from any property line, or more than 150 feet from any public road right-of-way, except as provided in sub. (2), if the livestock facility will have 1,000 animal units or more.

(c) Prevent the use of a livestock structure that was located within the setback area prior to the effective date of the setback requirement.

(d) Prevent the expansion of a livestock structure that was located within the setback area prior to the effective date of the setback requirement, other than an expansion toward the property line or public road to which the local setback applies.

Note: Many local jurisdictions have established basic property line and road setback requirements by ordinance. Setbacks vary depending on local circumstances, and often reflect years of local experience. Subsection (1) honors local setback requirements, provided that the setbacks do not exceed the limits specified in sub. (1).

(2) MANURE STORAGE STRUCTURE; SETBACK. A waste storage structure may not be located within 350 feet of any property line, or within 350 feet of the nearest point of any public road right-of-way, unless one of the following applies:

(a) The location of the waste storage structure complies with a local ordinance that specifies a shorter setback that is specific to waste storage facilities or waste storage structures.

(b) The waste storage structure existed prior to May 1, 2006. This paragraph does not authorize an expansion, toward a property line or public road right-of-way, of a waste storage structure that is located within 350 feet of that property line or public road right-of-way.

(c) The waste storage structure is a single new waste storage structure constructed no closer to the relevant property line or public road than a waste storage structure that existed on the same tax parcel prior to May 1, 2006, provided that the new structure is no larger than the existing structure and is located within 50 feet of the existing structure.

Note: See definition of "waste storage structure" in s. ATCP 51.01 (44).

(3) NAVIGABLE WATERS AND WETLANDS. A livestock facility shall comply with an applicable shoreland or wetland zoning ordinance that is enacted within the scope of authority granted under s. 59.692, 61.351 or 62.231, Stats.

Note: Essentially all navigable waters are now protected by ordinances that require building setbacks of 75 feet or more (depending on the ordinance). Zoning restrictions, if any, typically apply to *new or enlarged structures*. A zoning ordinance applies for purposes of sub. (3) if it is enacted within the scope of statutory authority under s. 59.692, 61.351 or 62.231, Stats., even if it is also enacted under other authority.

(4) FLOODPLAIN. A livestock facility shall comply with an applicable floodplain zoning ordinance that is enacted within the scope of statutory authority under s. 87.30, Stats.

Note: County or local zoning ordinances currently apply to many, but not all, waterways (not all waterways have mapped floodplains). Zoning restrictions, if any, typically apply to *new or enlarged structures*. A zoning ordinance applies for purposes of sub. (4) if it is enacted within the scope of statutory authority under s. 87.30, Stats., even if it is also enacted under other authority.

(5) WELLS. (a) Wells in a livestock facility shall comply with chs. NR 811 and 812.

(b) Except as provided in par. (c), new or substantially altered livestock structures shall be separated from existing wells by the distances required in chs. NR 811 and 812, regardless of whether the livestock facility operator owns the land on which the wells are located.

(c) Paragraph (b) does not prohibit the alteration of a livestock structure that existed on May 1, 2006, unless that alteration reduces the distance between the livestock structure and an existing well.

Note: DNR rules under chs. NR 811 and 812 spell out well construction and well location standards to protect water supplies. Violation of well setback requirements in ch. NR 811 or 812 may prevent use of a well. DNR may grant appropriate variances, as provided in chs. NR 811 and 812.

(6) PRESUMPTION. For purposes of local approval, a livestock facility is presumed to comply with this section if the application for local approval complies with s. ATCP 51.30.

Note: Under s. ATCP 51.30, an application must be complete, credible and internally consistent. The application must include an area map, a site map, and a certification that the livestock facility complies with this section (see *Appendix A*). A local approval is conditioned upon compliance in fact (see s. ATCP 51.34 (4)). The presumption in sub. (6) may be rebutted by clear and convincing evidence in the record (see s. ATCP 51.34 and 51.36).

History: CR 05-014; cr. Register April 2006 No. 604, eff. 5-1-06.

ATCP 51.14 Odor and air emissions. (1) **ODOR STANDARD.** Except as provided in subs. (2) to (4), a livestock facility shall have an odor score of at least 500. The operator shall calculate the odor score according to *Appendix A, worksheet 2*, or by using the equivalent spreadsheet provided on the department's website. An application for local approval shall include *worksheet 2* or the spreadsheet output.

Note: The spreadsheet equivalent of *Appendix A, worksheet 2* is available on the department's website at <http://livestocksiting.wi.gov/>.

Odor score is based on *predicted odor generation* (based on size and type of livestock facility), odor practices, and the proximity and density of "affected neighbors." See *Appendix A, worksheet 2*.

An *odor score* is a predictive estimate. The standard in sub. (1) applies only for purposes of local livestock facility siting decisions under this chapter. Failure to com-

ply with the standard in sub. (1) does not constitute evidence of a public or private nuisance, negligence, or a taking of property.

Odor control practices may also control air pollution emissions. The department will work to coordinate odor and air emissions field research with DNR, the Wisconsin agricultural stewardship initiative (WASI), and the University of Wisconsin. The department will consider research results when it reviews this chapter at least once every 4 years (see s. 93.90 (2) (c), Stats.). As part of its review, the department will consult with an advisory committee that includes representatives of livestock producers, local government and environmental interests. The department will consider amendments to this rule, as appropriate, based on research findings.

(2) EXEMPTIONS. The odor standard in sub. (1) does not apply to any of the following livestock facilities unless the facility operator voluntarily completes and submits *worksheet 2* or the equivalent spreadsheet output with the operator's application for local approval:

- (a) A new livestock facility with fewer than 500 animal units.
- (b) An expanded livestock facility with fewer than 1,000 animal units.
- (c) A livestock facility in which all livestock structures will be located at least 2,500 ft. from the nearest affected neighbor.

Note: "Affected neighbors" (ATCP 51.01 (2)) are residences or "high-use buildings" (ATCP 51.01 (16)) other than those owned by the livestock operator or by persons who agree to be excluded from odor score calculations under sub. (1).

(3) CLUSTERS. If all of the livestock structures in a livestock facility are divided among 2 or more clusters, such that no cluster is located closer than 750 feet to any other cluster, an operator may choose to calculate an odor score under sub. (1) for each cluster rather than for the entire livestock facility. Each cluster shall comply with the odor standards in sub. (1).

Note: For example, a dairy operator can take advantage of sub. (3) if a proposed dairy facility includes a milking operation (cluster 1) and a heifer facility (cluster 2) located 800 feet from each other.

(4) LOCAL DISCRETIONARY CREDIT. (a) Notwithstanding sub. (1), a political subdivision may in its discretion approve a livestock facility with an odor score of less than 500, provided that the odor score is not less than 470.

(b) If a political subdivision exercises its discretionary authority under par. (a), its written decision under s. ATCP 51.34 (3) shall state the reason or reasons for that exercise of discretionary authority.

(c) The livestock facility siting review board may not review any of the following under s. 93.90 (5), Stats.:

1. A political subdivision's exercise, or refusal to exercise, discretionary authority under par. (a).

2. The adequacy of the political subdivision's stated reasons under par. (b) for exercising discretionary authority under par. (a).

Note: A political subdivision *must* approve a livestock facility that meets the odor standard under sub. (1), assuming that the facility meets other livestock facility siting standards under this chapter (see ATCP 51.34 (1)).

A political subdivision may *not* approve a livestock facility that fails to meet the odor standard under sub. (1), except that the political subdivision may exercise its discretionary authority under sub. (4) (a) in favor of an applicant if it chooses to do so. For example, a political subdivision may exercise its discretionary authority under sub. (4) (a) based on factors such as community tolerance, the applicant's near attainment of a standard, innovative odor control practices, local land use plans, or the applicant's past reputation for good management and community relations.

(5) CREDITS FOR ODOR CONTROL PRACTICES. In the calculation of predicted odor under sub. (1), an operator may claim credit for all of the following:

(a) Odor control practices, identified in *Appendix A, worksheet 2*, which the operator agrees to implement. For each odor control practice, the operator may claim a credit specified in *Appendix A, worksheet 2*.

(b) An odor control practice not identified in *Appendix A, worksheet 2* if the department pre-approves a credit for that practice. The operator shall claim the pre-approved credit according to the procedure specified in *Appendix A, worksheet 2*.

(c) An operator seeking department approval under par. (b) shall submit all of the following to the department in writing:

1. A clear description of the odor control practice for which the operator seeks an approved credit.

2. Scientific evidence to substantiate the efficacy of the odor control practice under relevant conditions.

(d) The department may approve a credit for an odor control practice under par. (b) if, in the department's opinion, there is adequate scientific evidence to show that under relevant conditions the practice will result in odor reduction commensurate with the approved credit. The department shall grant or deny the request within 90 days after the department receives the request.

Note: An odor control practice credit under sub. (5) is expressed, in the odor score calculation in *Appendix A, worksheet 2*, as a multiplier value (the *lower* the multiplier, the greater the benefit to the livestock operator).

(6) FUTURE REFERENCE POINTS. (a) Whenever an operator seeks local approval for the expansion of a livestock facility previously approved under this chapter, the operator may calculate an odor score under sub. (1) by reference to the same affected neighbors referenced in the odor score calculation for the prior local approval. The operator is not required to include, in the new odor score calculation, an affected neighbor that was not referenced in the odor score calculation for the prior local approval.

(b) Paragraph (a) applies regardless of any change in ownership of the livestock facility since the prior local approval, and regardless of the amount of time that has passed since the prior local approval, provided that the prior local approval has not been lawfully withdrawn for good cause under s. ATCP 51.08 (2) or 51.34 (4) (b).

Note: The odor score calculation in *Appendix A, worksheet 2* is partly based on the proximity and density of "affected neighbors" (see ATCP 51.01 (2)). An application for local approval documents those "affected neighbor" reference points. Subsection (6) protects an operator against the effects of encroaching development, without regulating that development directly.

A local government must keep a complete record of each local approval for at least 7 years, and must file with DATCP a copy of each approval (including the application on which it was based). The local government must also provide the livestock operator with documentation of the local approval, including the maps on which the approval was based (see s. ATCP 51.34 (3) (b)). The approved maps document the "odor score" reference points for purposes of sub. (6).

The livestock operator can record the local approval (including mapped "odor score" reference points) with the local register of deeds, and can convey the documentation to subsequent purchasers. In those ways, an operator can document previously-approved "odor score" reference points for purposes of a subsequent expansion.

(7) PRESUMPTION. For purposes of local approval, a livestock facility is presumed to comply with this section if the application for local approval complies with s. ATCP 51.30.

Note: Under s. ATCP 51.30, an application must be complete, credible and internally consistent. The application must include, among other things, a worksheet (or equivalent spreadsheet output) that shows compliance with this section. See *Appendix A, worksheet 2*. Local approval is conditioned upon compliance in fact (see s. ATCP 51.34 (4)). The presumption in sub. (7) may be rebutted by clear and convincing evidence in the record (see s. ATCP 51.34 and 51.36).

History: CR 05-014: cr. Register April 2006 No. 604, eff. 5-1-06.

ATCP 51.16 Nutrient management. (1) NUTRIENT MANAGEMENT STANDARD. (a) Except as provided in par. (c):

1. Land applications of waste from a livestock facility approved under this chapter shall comply with NRCS nutrient management technical standard 590 (September, 2005), except for sections V.A.2.b(2), V.D, V.E and VI.

Note: NRCS nutrient management technical standard 590 (September, 2005) is reprinted in *Appendix B*. The following sections of the reprinted standard do *not* apply for purposes of this chapter:

V.A.2.b(2), related to additional requirements imposed by local conservation plans.

V.D, related to additional criteria to minimize N and particulate air emissions.

V.E, related to additional criteria to protect the physical, chemical and biological condition of the soil.

VI, related to discretionary considerations.

2. A nutrient management checklist, shown in *Appendix A, worksheet 3, part C*, shall accompany an application for local approval. A qualified nutrient management planner, other than the livestock operator, shall answer each checklist question. The planner shall have reasonable documentation to substantiate each answer, but neither the planner nor the operator is required to submit that documentation with the checklist.

Application (continued)
<p>8. Total Animal Units</p> <p>Enter total <i>animal units</i> from worksheet 1:</p> <p>Total Animal Units: _____. This is the maximum <i>livestock facility</i> size for which the applicant requests approval at this time.</p>
<p>9. Area Map of Livestock Facility</p> <p>Attach a scale map or aerial photo of the proposed <i>livestock facility</i> and surrounding area. The map or photo must be appropriately sized and marked, so that it clearly and legibly shows all of the following:</p> <ul style="list-style-type: none"> • All existing and proposed <i>livestock structures</i>. Label each <i>livestock structure</i> to show structure type, and whether existing or proposed. • The area lying within 2 miles of any of the <i>livestock structures</i>. Show all existing buildings, property lines, roadways, and navigable waters lying within that area. • All residences and <i>high use buildings</i> within 2500 ft. of any <i>livestock structure</i>. Show which (if any) of those buildings are owned by the applicant, or by persons who have agreed to exclude the buildings from the applicant's odor worksheet calculations. • Topographic lines at 10 ft. elevation intervals. • Map scale and north direction indicator.
<p>10. Site Map of Livestock Facility</p> <p>Attach a scale map or aerial photo of the proposed <i>livestock facility</i> site. The map or photo shall be appropriately sized and marked, so that it clearly and legibly shows all of the following:</p> <ul style="list-style-type: none"> • All existing and proposed <i>livestock structures</i>. Label each <i>livestock structure</i> to show structure type, and whether existing or proposed. • The area lying within 1,000 ft. of any of the <i>livestock structures</i>. Show all existing buildings, property lines, roadways, navigable waters, and known <i>karst features</i> within that area. • Topographic lines, at 2 ft. elevation intervals, for the area within 300 feet of the <i>livestock structures</i>. • Map scale and north direction indicator.
<p>11. Location of Livestock Structures</p> <p>The applicant certifies that:</p> <ul style="list-style-type: none"> • All <i>livestock structures</i> comply with applicable local property line and road setbacks (see <i>ATCP 51.12</i>). • All <i>waste storage structures</i> comply with setbacks in <i>ATCP 51.12(2)</i>. • All <i>livestock structures</i> comply with applicable local shoreland, wetland, and floodplain zoning ordinances (copies available from local government). • Wells comply with the Wisconsin well code (<i>NR 811</i> and <i>812</i>). <i>New or substantially altered livestock structures</i> are separated from existing wells (including neighbors' wells) by setback distances required in <i>NR 811</i> and <i>812</i>.

Application (continued)**12. Employee Training Plan**

Attach an Employee Training Plan for employees who will work at the *livestock facility*. Applicant determines plan contents, as long as the plan identifies all of the following:

- Training topics including, at a minimum, nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response.
- The number and job categories of employees to be trained.
- The form and frequency of training, which at a minimum must include a plan for at least one training per year.
- Training presenters (these may include *livestock facility* managers, consultants or professional educators).
- A system for taking and recording attendance.

13. Environmental Incident Response Plan

Attach an Environmental Incident Response Plan for the *livestock facility*. Applicant determines plans contents, as long as the plan identifies all of the following:

- Types of environmental incidents covered. These must include, at a minimum, overflows and spills from waste storage facilities, catastrophic system failures, manure spills during transport and application, movement of manure during or after application, catastrophic mortality disposal emergency, and odor complaints.
- The name and business telephone number of at least one individual who will handle public questions and concerns related to environmental incidents.
- The names and telephone numbers of first responders (e.g. DNR, fire departments, excavation contractors).
- Incident response procedures, including emergency response, recordkeeping and reporting procedures.

14. Odor Management Plan (Optional)

An applicant required to complete the odor management worksheet may attach an *optional* odor management plan. The applicant determines plan contents, as long as the plan addresses all of the following: activities to reduce community conflict; practices used to reduce dust; practices used to reduce odor from feed storage leachate; practices used to conserve water; and practices used to reduce odor from dead animals.

Arm-lwr- 11/04 January 2006



Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
Phone: (608) 224-4630 or livestocksting@wisconsin.gov

Worksheet 2 – Odor Management

Instructions: This worksheet addresses odor from livestock structures. You are NOT required to complete this worksheet if any of the following apply (check box if applicable):

- I am requesting approval for a new livestock facility with fewer than 500 animal units.
I am requesting approval for an expanded livestock facility with fewer than 1,000 animal units.
All livestock structures will be at least 2500 ft. from the nearest affected neighbor.

If you checked any of the above boxes, just sign below and submit this page with your application. If you did NOT check any of the above boxes, you must complete this worksheet to calculate the odor score (Box 4) for your proposed livestock facility. To meet the odor management standard, you must have a total odor score of 500 or more.

If livestock structures are located in clusters that are separated by more than 750 feet, you may elect to complete a separate worksheet for each cluster. If you choose that option, each cluster must meet the odor management standard.

A complete worksheet must include Tables A and B. You may use a convenient automated spreadsheet in place of Tables A and B if you prefer (submit spreadsheet output instead of tables, results will be identical). However, you must still sign and submit this signature page. The spreadsheet is available at the DATCP website, http://www-datcp.state.wi.us.

TO COMPLETE THIS WORKSHEET, FOLLOW THESE STEPS:

Step 1: Complete Table A to determine the Predicted Odor from your livestock structures. Enter the Predicted Odor in Box 3 below (NOT Box 1).

Step 2: Complete Table B to determine your Separation Score. Enter your Separation Score in Box 1 below. (NOT Box 2).

Step 3: Enter your management credits in Box 2 (maximum 100 points). All applicants may enter 80 points for completing required incident response and employee training plans (described on page A-3). Applicants completing an optional odor management plan (described on page A-3), may add an additional 20 points. Applicants determine plan contents, as long as the plan addresses the required topics.

Step 4: Add Box 1 and Box 2. Subtract Box 3 and enter the total in Box 4. This is your Odor Score.



A local government must approve a livestock facility with an odor score of 500 or more (Box 4). You may add odor control practices to increase your odor score to 500 or more. A local government may approve, but is not required to approve, a livestock facility with an odor score less than 500 but not less than 470.

Signature of Applicant or Authorized Representative

Date

Worksheet 2 (continued)

TABLE A: Predicted Odor from Livestock Structures

Instructions: Complete Table A. You must measure all structures to the same affected neighbor. If the nearest neighbor is not the same for all livestock structures, you will need to complete the table once for each close neighbor. Compare the "H" Total of the table for each neighbor. The neighbor that has the lowest weighted distance is considered your nearest affected neighbor, and you should use that table to complete the odor worksheet. Enter the Column F total on page A-6 in **Box 3**. Enter the Column G result on page A-8 in **Table B, Step 1**. Add lines or use additional sheet, if needed, to list all structures.

1. Animal Housing Areas – List each							
Column A Manure Management Type Enter your housing buildings and the related 4-letter code from Chart 2. You may exclude up to 1000 calf hutches and 4 structures less than the sq. footage listed in Chart 2.	Column B Odor Generation Number From Chart 2	Column C Housing Area (ft ²) Use occupied animal area only. Exclude feed alleys, holding areas and milking parlors. Express in 10,000's. (Ex: 15,523 ft ² = 1.55)	Column D Odor Control Practice Codes List all that apply to each housing area, from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor(ft) Measure from corner of the bldg to corner of the neighbor's bldg. Measure all to the same neighbor.	Column H Weighted Distance (ft.) Multiply columns F & G
1A..							
1B.							
1C.							
1D.							
1E.							
2. Waste Storage Facilities – List each							
Column A Waste Storage Type Enter 4-letter type code from Chart 2	Column B Odor Generation Number From Chart 2	Column C Exposed Surface Area Measure surface area (ft ²) when pit is filled to capacity, excluding freeboard. Enter in 10,000's. (Ex: 75,575 = 7.56)	Column D Odor Control Practice Codes List all that apply to each facility from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor (ft) Measure from top inside edge to neighbor's bldg corner. Measure to the same neighbor.	Column H Weighted Distance (ft.) Multiply columns F & G
2A.							
2B.							
2C.							
2D.							
3. Animal Lots – List each							
Column A Animal Lot Type Enter 4-letter type code from Chart 2	Column B Odor Generation Number From Chart 2	Column C Animal Lot Area (ft ²) Enter in 10,000's (Ex: 7438 = .74)	Column D Odor Control Practice Codes List all that apply to each facility from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor(ft) Measure from corner to corner. Measure all structures to the same neighbor.	Column H Weighted Distance (ft.) Multiply columns F & G
3A.							
3B.							
3C.							
F Total					G = (H Total) ÷ (F Total)		H Total

Enter on page A-6, Box 3
Enter on page A-8, Table B, Step 1

Worksheet 2 (continued)

Table B: Separation Score

INSTRUCTIONS		RESULTS
Step 1: Enter, at right, the result from Table A, Column G (page A-7).		Distance (ft.) to Nearest Affected Neighbor: _____
Step 2: Select multiplier based on the compass direction looking from the <i>livestock facility</i> to the nearest <i>affected neighbor</i> . Enter at right.		Multiplier: _____
Compass Direction	Multiplier	
North	1.0	
Northeast	1.0	
East	1.1	
Southeast	1.2	
South	1.2	
Southwest	1.2	
West	1.3	
Northwest	1.1	
Step 3: Calculate wind-adjusted separation distance (Distance to nearest <i>affected neighbor</i> x multiplier). Enter at right.		Wind-Adjusted Separation Distance (ft.) _____
Step 4: Determine <i>affected neighbor</i> density and enter at right: <i>Low density</i> = No more than 5 residences and no <i>high-use buildings</i> within 1300 ft of each structure. <i>High density</i> = 6 or more residences or at least one <i>high-use building</i> within 1300 ft of each structure.		Low or High Density? _____
Step 5: Use results above and Chart 1 to find your Separation Score. Enter at right and on Page A-6 in Box 1 .		Separation Score

Chart 1: Separation Score

Wind-Adjusted Separation Distance (ft.)	Low Density	High Density
0-99	505	503
100-149	506	504
150-199	511	507
200-249	516	510
250-299	521	514
300-349	527	518
350-399	534	523
400-449	541	528
450-499	548	533
500-599	560	542
600-699	577	555
700-799	595	569
800-899	615	585
900-999	636	601
1000-1099	658	619
1100-1199	681	637
1200-1299	705	657
1300-1399	730	
1400-1499	756	
1500-1599	783	
1600-1699	810	
1700-1799	839	
1800-1899	868	
1900-1999	899	
2000-2099	930	
2100-2199	962	
2200-2299	994	
2300-2399	1027	
2400-2499	1061	
2500-2749	1123	
2750-2999	1214	
3000-3249	1309	

Worksheet 2 (continued)

Chart 2: Odor Generation Numbers

Animal Housing Area Type	Housing/ Management Type Code	Manure Management Method	Odor Generation Number	Exempt Buildings Maximum Size (ft²) (May exclude up to 4)
Dairy Stanchion	DSDC	Daily to weekly cleaning	2	7500
Dairy Free Stall and Beef & Dairy Heifers (Forage Ration)	DBSS	Slatted floor (includes floor and pit below)	6	2500
	DBSC	Scrape	4	3500
	DBAF	Alley flush to storage	10	1500
	DBBP	Bedded pack	2	7500
Beef Finishing (High Energy Ration)	BFSF	Slatted floor (includes floor and pit below)	12	1000
	BFSC	Scrape	8	2000
	BFBP	Bedded pack	4	3500
Pork Gestation/ Farrow/Nursery	PGSF	Slatted floor (includes floor and pit below)	46	N/A
	PGPP	Pull plug to storage	22	N/A
Pork Finishing	PFSF	Slatted floor (includes floor and pit below)	34	N/A
	PFPP	Pull plug to storage	20	N/A
	PFSS	Scrape systems to storage	11	1500
	PFDB	Deep bedded	4	3500
Poultry	PBLT	Broiler (litter)	1	15000
	PDLQ	Ducks (liquid)	20	N/A
	PLAY	Layers	20	N/A
	PTDL	Turkey and Ducks (litter)	2	7500

Type Codes	Waste Storage Facility Types <i>Note: Storage under slatted floor is addressed under animal housing.</i>	Odor Generation Number
WSSS	Solid (stack)	2
WSLT	Long term (6 months or longer as determined in Column E of worksheet 3)	13
WSST	Short term (less than 6 months as determined in Column E of worksheet 3)	28

Animal Lot Codes	Animal Lot Types		Odor Generation Number
ALPV	Paved		4
UPDB	Unpaved	Dairy/Beef/Sheep/Goats	6
UPSW		Swine/Poultry	11

Worksheet 2 (continued)

Chart 3: Odor Control Practices

Category	Practice Code	Practice Name (Practices must meet specifications on pages A–11 to A–13)	Multiplier*
Animal Housing Area			
A	A1	Diet manipulation	0.8
B (Choose only 1)	B1	Bio–filter	0.1
	B2	Vegetable oil sprinkling (for swine only)	0.4
	B3	Fresh water flush	0.4
	B4	Treated water flush	0.7
	B5	Air Dam (for swine only)	0.9
C	C1	Windbreak (includes man–made berms)	0.9
D	D1	Frequent cleaning of animal housing area	0.9
Waste Storage Facilities			
E (Choose only 1)	E1	Anaerobic digestion	0.2
	E2	Chemical or biological additives	0.8
	E3	Compost	0.2
	E4	Solids Separation and Reduction	0.6
	E5	Water Treatment	0.1
F (Choose only 1)	F1	Aeration	0.3
	F2	Bio–cover	0.4
	F3	Geotextile cover	0.5
	F4	Impermeable cover	0.1
	F5	Natural crust	0.3
	F6	Bottom fill	0.9
G	G1	Windbreak (includes man–made berms)	0.9
Animal Lots			
H (Choose only 1)	H1	Frequent cleaning of <i>animal lot</i>	0.4
	H2	Drag <i>animal lot</i>	0.5
I	I1	<i>Animal lot</i> moisture control	0.8
J	J1	Windbreak (includes man–made berms)	0.9

*Smaller multiplier = more odor controlled (e.g. a multiplier of 0.4 represents a 60% control).

Innovative Odor Control Practices (all odor sources):

You may take credit for odor control practices not listed in Chart 3 if *DATCP* pre–approves a multiplier for each of those practices. Follow the procedure in *ATCP 51.14(5)(c)* to obtain *DATCP* approval. If you obtain *DATCP* approval, you may include the approved practice and multiplier in odor worksheet calculations in the same manner as for odor control practices listed in Chart 3 (attach *DATCP* approval to your application).

Worksheet 2 (continued)

Odor Control Practice Specifications

Odor control practices identified in Chart 3 must meet the following specifications:

Animal Housing

Diet manipulation (A1) – Limit protein in animal diet by one of the following means:

- Match nutrient supply with animal requirements.
- Formulate low-protein amino acid supplemented diets.
- Add phytase enzyme ingredients.
- Process ingredients in ways that limit protein content of processed feed.
- Use phase feeding.
- Use split sex feeding.
- Minimize feed wastage.

Bio-filter (B1) – Vent air from *animal housing areas* through a bio-filter consisting of compost and wood chips, mixed at a rate of 30:70 to 50:50 (ratio by weight of compost to wood chips). The mixture must be at least 40% moisture by weight. The bio-filter must be 10" to 18" thick, and must have an area of at least 50 to 85 sq. ft. per 1000 cu. ft. per minute (cfm) of airflow.

Vegetable oil sprinkling (B2) – Sprinkle vegetable oil on floors in *animal housing areas* (swine) each day. Apply oil at start-up rate of approximately 40 milliliters per square meter per day (mL/m²-day) in the first 1–2 days of each production cycle. During the remainder of each production cycle, apply oil at maintenance rate of 5 mL/m²-day. Avoid oil applications to pens near fans, to areas near heaters, and to areas surrounding feeders.

Fresh water flush (B3) – Use fresh water to flush manure from floors of *animal housing areas* into collection or *waste storage structures*. Flush at least 3 times a day, and more often if necessary, to prevent manure from drying and sticking to floors. Flush must be adequate to remove manure solids effectively.

Treated water flush (B4) – Use treated manure effluent to flush manure from floors of *animal housing areas* into collection or *waste storage structures*. Flush at least 3 times a day, and more often if necessary, to prevent manure from drying and sticking to floors. Flush with waste storage effluent treated by one of the following means:

- *Solids Separation and Reduction (see E4 below).*
- *Aeration (see F1 below).*
- *Anaerobic digestion (see E1 below).*

Air Dam (B5) – Erect and maintain a wall (typically a 10-foot x 10-foot pipe frame and tarpaulin) placed at the end of a swine-finishing building, immediately downwind of the exhaust to deflect air and odor plume. Replace material used for the barriers (tarpaulins on a frame of solid wood, for example) as needed, which may be from a few years to decades, depending on the material.

Windbreak (C1) – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the animal housing. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to *NRCS Technical Guide Standard 380* (June, 2002).

Frequent cleaning of animal housing area (D1) – Scrape and remove manure from *animal housing areas* at least 3 times a day.

Worksheet 2 (continued)

Waste Storage Facilities

Anaerobic digestion (E1) – Subject manure to managed biological decomposition within a sealed oxygen-free container (“digester”). Anaerobic digestion must meet design and operational standards necessary to achieve adequate odor control, including requirements for solids concentration, flow rates, retention time, and minimum temperatures. Systems must meet the following:

- *Plug flow digester.* Treats manure with a total solids concentration of 8 to 14%. Must be kept in the digester for at least 20 days at a temperature of 95° to 104° F. (35° to 40° C). The digester’s ratio of flow path width to fluid depth must be between 3.5:1 and 5:1.
- *Complete mix digester.* Treats manure with a total solids concentration of 2.5 to 10%. Must be kept in the digester for at least 17 days at a temperature of 95° to 104° F. (35° to 40° C.). The digester must have appropriate mixing devices to ensure complete mixing.
- *Fixed film digester.* Treats manure with a total solids concentration of not more than 5%. Must be kept in the digester for 1 to 6 days at a temperature of 59° to 99° F (15° to 39° C). Microbial support material must have at least 3-inch openings.
- *Other systems.* Use proprietary design and performance specifications that are commonly accepted and provide adequate odor mitigation.

Chemical or biological additives (E2) – Apply, to stored manure, chemical or biological additives that are scientifically proven to be effective in reducing odor from that manure when applied under applicable conditions and in applicable amounts.

Compost (E3) – Aerobically treat solid or semi-solid manure to create compost. Compost must have a carbon: nitrogen ratio of 25:1 to 40:1, and must consist of at least 40 to 60% moisture by weight. Composted material must be held at a temperature of more than 130° F. (54° C.) for more than 5 days.

Solids Separation and Reduction (E4) – Reduce the solid content of stored manure to an average of less than 2% solids through separation, multi-tiered pits or other means.

Water Treatment (E5) – Install and use a physical, chemical or biological process that removes the majority of contaminants from the waste stream, resulting in a liquid effluent meeting surface water discharge standards. The remaining solid fraction or sludge must be accounted for based on its form, and the management it is subject to.

Aeration (F1) – Use aeration equipment to maintain aerobic activity in stored manure. Aeration must maintain an average of 2 milligrams of dissolved oxygen per liter of manure stored in the upper foot of manure stored in the aerated structure between April and October.

Bio-cover (F2) – Cover the surface of waste storage structure with an 8” to 12” thick blanket of dry wheat, barley or good quality straw. The blanket must cover nearly all of the waste surface between the months of April and October. Add to the blanket as necessary (typically every 6 weeks to 4 months) to maintain the required cover.

Geotextile cover (F3) – Cover the surface of waste storage structure with a geotextile membrane that is at least 2.4 mm thick. The membrane must cover nearly all of waste surface between the months of April and October.

Impermeable cover (F4) – Cover the surface of waste storage structure with an impermeable barrier that prevents gas from escaping. Gas must be drawn off, and either treated or burned.

Natural crust (F5) – Maintain a natural crust of dry manure on the surface of stored manure. The natural crust must cover a substantial amount of the surface area of the stored manure, for most of the time between the months of April and October.

Bottom fill (F6) – Add manure to a liquid *manure storage structure* from the bottom so as to limit disturbance to the surface of the stored manure.

Windbreak (G1) – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the *waste storage facility*. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to *NRCS Technical Guide Standard 380* (June, 2002).

Worksheet 2 (continued)

Animal Lots

Frequent cleaning of animal lot (H1) – Scrape and remove manure from *animal lot* surfaces at least once every 3 days. You may leave an undisturbed, compacted manure layer (1 to 2 inches thick) on the surface of unpaved *animal lots* to provide good surface sealing.

Drag animal lot (H2) – Drag manure in *animal lots* with harrow or disk at least once every 7 days during the months of April through October, to aerate and dry the manure.

Animal lot moisture control (I1) – Prevent runoff water from flowing onto *animal lots* from roofs and other surfaces. Use diversions or roof runoff systems identified in s. ATCP 50.70 or 50.85. *Animal lots* must have a grade of at least one percent to promote drainage and drying.

Windbreak (J1) – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the *animal lot*. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to NRCS Technical Guide Standard 380 (June, 2002).

Discussion Guide – Setbacks and Odor Emissions Livestock Facility Siting Technical Expert Committee

Scope of Discussion

The committee's third discussion covers items related to setbacks, and odor and air emissions.

Setbacks: Under ATCP 51, livestock structures and manure storage structures shall comply with local ordinance requirements related to setbacks from property lines and public roads, except that no local setback requirement may exceed the maximum distances listed in ATCP 51.12.

Odor and Air Emissions: A livestock facility applying for local approval shall have an odor score of at least 500. The operator shall calculate the odor score according to Appendix A, worksheet 2, or by using the equivalent spreadsheet provided on the department's website. An exemption is provided for new facilities with fewer than 500 AU, expanded facilities with fewer than 1,000 AU or facilities in which all structures are at least 2,500' from the nearest affected neighbor.

During the meeting, DATCP staff will present on the setbacks and odor emissions standards in ATCP 51 and related recommendations made by past committees. The committee will address the items, below, and determine if recommendations need to be made for changes to the department's rule.

Notes will be prepared by DATCP staff reflecting the committee's discussions and recommendations.

Background

Setbacks: ATCP 51.12 establishes the standard for setback requirements on livestock facilities through a local siting ordinance.

- A local ordinance may not require livestock structures to be set back more than 100' from a property line if the facility will have < 1,000 animal units (AU), or more than 200' if the facility will have 1,000 AU or more
- A waste storage structure may not be located within 350' of a property line or public road right of way unless a local ordinance lists a shorter setback specific to waste storage structures

Odor and Air Emissions: ATCP 51.14 establishes the standard for odor management.

- A livestock facility shall have an odor score of at least 500, calculated using Worksheet 2
 - Odor generating sources are listed in Chart 2, odor control practices are listed in Chart 3
 - The following are exempt from this requirement: new livestock facilities below 500 AU, expanded livestock facilities below 1,000 AU, and livestock facilities with 2,500' of separation from their nearest affected neighbor
- A political jurisdiction may, in its discretion, approve a facility with an odor score between 470 and 500 if it gives the reason for that discretion in the record of decision-making under ATCP 51.34(3)
- Odor score credits are given for odor control practices identified in Worksheet 2 if the operator agrees to implement them. The value of the credit reflects the effectiveness of each practice in controlling odor
- Once local approval is given for the odor score of a livestock facility, future approvals for the same facility may use the same affected neighbors to calculate a new odor score

In 2010, the technical expert committee reviewed items with the 51.12 and 51.14 standards for setbacks and odor and offered the following:

Setbacks:

- In addition to the road and property line setbacks, require setbacks from neighboring residences and high-use buildings (affected neighbors)
- Setbacks for new livestock operations should be treated differently than expanding ones, except for expansions that are equivalent to a new operation, i.e. 100 AU to 2,500 AU

Odor and Air Emissions:

- Odor generation numbers for some sources should be modified
 - Dairy free stall housing with a flush system is underestimated, high-rise and belt-drive poultry layer housing should be differentiated, waste storage size (volume) not duration should be used to calculate odor
- Create two new odor generating sources: Sheep/goat housing and sand/manure solids separation systems
- 11 out of 24 odor control practice credits need to be changed – increase 1, decrease 6, redefine 3 and eliminate 1
- Create two new odor control practices: immediate return of flush water, poultry litter drying belt systems
- Remove the at-least 2,500' separation to nearest affected neighbor exemption
- The required environment incident response plans should require more odor control considerations, and the management plan credit should be reduced

In 2014-2015, the technical expert committee reviewed issues with the 51.12 and 51.14 standards for setbacks and odor and offered the following (*indicates a repeat from a previous TEC*):

Setbacks:

- Require new and substantially modified manure storage structures to be set back greater than 350' from roads and property lines, reduced according to odor control practices
- Require greater setbacks to property lines and roads for livestock structures
- Require greater setbacks for livestock facilities less than 1,000 AU, reduced according to odor control practices
- *Require setbacks to residential and high-use buildings*

Odor and Air Emissions:

- The exemptions from the odor score should remain for new facilities less than 500 AU, expanded facilities less than 1,000 AU and facilities completely located at least 2,500' away from the nearest effective neighbor
- Applicants should be required to complete a more detailed employee training plan, incident response plan and odor management plan and should be given additional odor credits for doing so
- *Odor generation numbers should be increased for housing dairy/beef alley flush to storage, and a new housing generator should be added for layered poultry with drying belts*
- Base odor generation numbers for waste storage facilities should not be calculated using storage duration

- *Add odor generation numbers for sand and solids separation systems to account for active treatment areas and storage of separated materials*
- Add wet scrubbers and recirculated flush as control practices for housing and remove fresh water flush
- Increase the odor control practice credits for housing windbreaks and geotextile covers, decrease them for solids separation and anaerobic digestion, eliminate the credit for aeration of storage
- Change the specifications for the following animal housing and manure storage odor control practices: diet manipulation, bio-filters, treated water flush, anaerobic digestion, chemical and biological additives, compost, solids separation, and natural crust

In 2018-19, the technical expert committee reviewed issues with the 51.12 and 51.14 standards for setbacks and odor and offered the following (*indicates a repeat from a previous TEC*):

- The odor score should be replaced by a system of setbacks based on odor generation numbers and odor control credits
- The 350' maximum setback requirement for manure storage facilities should be recalculated using OFFSET and may result in 600' or more
- *Setbacks from odor sources to residences and high-use structures should be used to afford greater odor protections to those structures*

Items for consideration

Setbacks:

The current setback standards in 51.12 set maximum values for what a local ordinance may allow. This is intended to balance odor and air emissions protections for adjacent landowners as well as provide consistency of local regulation for livestock operators. However, odor and air emissions remain a contentious issue between operators and adjacent landowners. Are the current values for maximum setbacks still meeting their original intent?

Only setbacks from public roads and property lines are included in 51.12. Would setback requirements from additional objects be appropriate given the intent of the standard? i.e. Setbacks from residences and high-use buildings

Odor and Air Emissions:

The current odor score is calculated using research circa 2004. As the industry has evolved over the last 19 years, is this scoring system still appropriate? Do adjustments to values need to be made?

The applicant is required to include an incident response plan, employee training plan and an optional odor management plan. The contents of these plans are up to the applicant as long as they address the listed subjects, and up to 100 credits towards the odor score are granted for completion. Are the guidelines for these plans thorough enough to meet the intent of their inclusion and the odor credit granted?

Questions for the Technical Expert Committee:

1. Are the current standards for setbacks and odor working to be;?
 - a. Protective of public health or safety.

- b. Practical and workable.
 - c. Cost-effective.
 - d. Objective.
 - e. Based on available scientific information that has been subjected to peer review.
 - f. Designed to promote the growth and viability of animal agriculture in this state.
 - g. Designed to balance the economic viability of farm operations with protecting natural resources and other community interests.
 - h. Usable by officials of political subdivisions.
2. Should the maximum setbacks in 51.12 be adjusted?
 3. Should additional setbacks beyond property lines and road be required?
 4. Should the department review the current odor score system for efficacy in predicting odor?
 - a. Does an approval for an odor score afford facilities and their affected neighbors adequate protections from land use conflicts, as intended?
 - b. Do values for odor sources and control practices need to be reviewed based on newer scientific evidence or models?
 - c. Should the department review the odor score system for effect, beyond odor, on adjacent properties?
 5. Are the required plans for incident response and employee training adequate in their current requirements? What about the optional odor management plan?
 - a. Are the credits given towards the odor score correlated to these plans' effect on a facility's predicted odor?